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NOTICE

MINERAL INFORMATION SERVICE TO BE DISTRIBUTED
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Increasing costs of printing and distribution as the circulation of MINERAL INFORMATION SERVICE has grown to over 30,000 copies each month make it necessary to institute a charge of $1 per year, beginning January 1, 1957. After that date MINERAL INFORMATION SERVICE will be mailed to subscribers only. The new charge is in conformity with State policy and recent interpretation of the Public Resources Code which provides that "the price (of all publications of the Division) shall approximate the cost of publication and distribution."

An order envelope and instructions to subscribers will be in the next issue.

LITHIUM COMPOUNDS

In 1953 the United States produced lithium raw materials valued at $2,134,000 and containing 1,767 tons of lithium oxide (Li_2O) or the equivalent of nearly nine million pounds of lithium carbonate (Li_2CO_3). In California, one company, the American Potash & Chemical Corporation at Trona, San Bernardino County, is producing lithium carbonate from the brine of Searles Lake. The production at Trona is 1 to 1½ million pounds per year and therefore represents a significant portion of the United States' supply. The pegmatites of the Pala district, San Diego County, yielded lithium ores from about 1900 to 1927, and for several years the production was the largest of any lithium-producing district in the United States.

Lithium was discovered in Sweden as long ago as 1817, but throughout the 19th century its use was largely confined to medicine. Industrial applications were developed very slowly until in World War II the lithium industry blossomed with explosive suddenness. Production rose from less than 100 tons of Li_2O immediately before the war to 13,319 tons of ore containing 848 tons of Li_2O in 1944. Following the cancellation of military contracts, production dropped nearly to the pre-war level. Applications developed during the war have taken root, however, and some authorities estimate that by 1960 the demand will have reached 30 million pounds a year of lithium carbonate or its equivalent.

Mineralogy and geologic occurrence

Lithium is a widespread element, but economic concentrations are sparsely distributed. It is present in sea water, in many mineral springs, and in the waters of a few undrained desert basins. Although lithia springs were at one time valued for their supposed therapeutic properties, the only lithium-bearing brine that has yielded lithium compounds commercially is that of Searles Lake, which contains only 0.048 percent lithium chloride or the equivalent of 0.017 percent Li_2O. The circumstances that permit its recovery are not likely to be duplicated elsewhere.

Appreciable amounts of lithium occur in certain Tertiary clays of the Mojave Desert of California. The table at the top of page two shows two analyses of the bentonitic clay mineral hectorite, which is mined near Hector, in San Bernardino County. A similar clay from a point 16 miles northeast of Amboy, San Bernardino County, contains 0.50 percent Li_2O. An unidentified lithium mineral is present in the shale associated with borax and kernite at Boron, Kern County. Lithia comprises a fraction of 1 percent of the shale.

Lithium ore minerals are few and with few exceptions occur only in pegmatites. None of the ores contain more than about 10 percent Li_2O; and because of substitution of sodium or potassium for